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in which R is a phenyl group or (C1-C8) alkyl group which are substituted or interrupted by one or more groups selected from the group consisting of phenyl, alkyl, oxy, amino and amido groups, which may or may not be substituted by alkyl, it being possible for the phenyl groups also to be substituted by one or more groups selected from the group selected from OH, Br. C1, I, (C1-C8) alkyleneoxy, NO2, NR_xRy, NR_xCORy, C3 alkyl, (C1-C8) alkyleneoxy, NO2, NR_xRy, NR_xCORy, and the being possible for the linear or branched or cyclic alkyl groups to be hydroxylated, and the salts of this acid with a physiologically acceptable inorganic or organic base.

10. Contrast agent according to Claim 9, for which R is a group of formula X CO-NR-R2

 polyhydroxyalkyl, or else R_1 is H and R_2 is a group of formula

CO-NR₁'R₂'
$$-CH_2-CO-NH$$

$$X$$

$$CO-NR1'R2'$$

$$CO-NR1'R2'$$

X being as defined above and R'_1 and R'_2 taking any one of the meanings given for R_1 and R_2 , with the exception of A, it being understood that $-\text{CO-NR}_1R_2$ or $-\text{CO-NR}'_1R'_2$ comprise at least two hydroxyl groups, and its salts with a physiologically acceptable inorganic or organic base.

11. Contrast agent according to Claim 9, for which R is a group of formula

$$Z \xrightarrow{Z'} Z \xrightarrow{R_1} R_2$$

$$R_5 \xrightarrow{R_4} R_3$$

in which a is 1 or 2,

Z is selected from the group consisting of a bond, CH_2 , CH_2CONH and $(CH_2)_2NHCO$,

Z' is selected from the group consisting of a bond, O, S, NQ, CH_2 , CO, CO-NQ, NQ-CO, NQ-CO-NQ and CO-NQ- CH_2 -CONQ,

 $Z^{\prime\prime}$ is selected from the group consisting of CO-NQ, NQ-CO, CO-NQ-CH2-CO-NQ and NQ-CO-CH2-NQ-CO,

with Q being H or an optionally hydroxylated (C_1-C_4) alkyl group,

 R_1 , R_2 , R_3 , R_4 and R_5 , independently of one another, are selected from the group consisting of H, Br, Cl, I, $CO-NQ_1Q_2$ or $N(Q_1)-CO-Q_2$, and Q_1 and Q_2 , which are identical or different, are selected from the group consisting of optionally hydroxylated (C_2-C_6) alkyl groups optionally interrupted by an oxygen atom, so that Q_1 and Q_2 together comprise

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from 4 to 10 OH groups, it being understood that at least 1 and at most 2 R_1 , R_2 , R_3 , R_4 and R_5 groups are amide groups.

Contrast agent according to Claim 11, in which R is 12. a group of formula

Process for the preparation of a racemic compound 13. of formula A as defined in claim 1 which consists:

1 - in keeping an aqueous solution of the mixture of the stereoisomers of the gadolinium complex of 1,4,7,10-tetraazacyclododecane-1,4,7,10-tetra(2glutaric acid), with a pH of between 2 and 4.5, at a temperature of greater than 70°C for a few hours to a few days, so as to obtain the racemic mixture of octaacids of formula:

$$CO_2H$$
 CO_2H
 CO_2H

2 - in reacting this mixture with the amine RNH $_2$, R being defined as in claim 1, with an agent which activates the acid functional group.

in which the according to Claim 13, Process 14. solution of complexed octaacid is maintained at

its reflux temperature for 35 to 45 hours at pH 3.

15. Racemic compound, for which R is a group of formula

$$Z = \begin{bmatrix} Z & R_1 & R_2 \\ & & R_3 \end{bmatrix}$$

$$R_5 & R_4$$

in which a is 1 or 2,

Z is selected from the group consisting of a bond, CH_2 , CH_2CONH and $(CH_2)_2NHCO$,

Z' is selected from the group consisting of a bond, O, S, NQ, CH_2 , CO, CO-NQ, NQ-CO, NQ-CO-NQ anf CO-NQ- CH_2 -CONQ,

Z" is selected from the group consisting of a bond CO-NQ, NQ-CO, CO-NQ-CH₂-CO-NQ and NQ-CO-CH₂-NQ-CO, with Q being H or an optionally hydroxylated (C_1-C_4) alkyl group,

 R_1 , R_2 , R_3 , R_4 and R_5 , independently of one another, are selected from the group consisting of H, Br, Cl, I, $CO-NQ_1Q_2$ and $N(Q_1)-CO-Q_2$, and Q_1 and Q_2 , which are identical or different, are selected from optionally hydroxylated (C_2-C_5) alkyl groups optionally interrupted by an oxygen atom, so that Q_1 and Q_2 together comprise from 4 to 10 OH groups, it being understood that at least 1 and at most 2 R_1 , R_2 , R_3 , R_4 and R_5 groups are amide groups.

16. Racemic compound according to Claim 15, in which R is a group of formula

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